

REMARKS

The present invention is a display device for use in applications such as mobile telephones which require efficient utilization of the display area of the device and for aesthetic reasons are desirably symmetrical. See the discussion in the Field of the Invention.

In accordance with an embodiment of the invention, a display device 10 in accordance with the invention includes a liquid crystal display 11 comprising first and second liquid crystal cells 12 and 13 positioned along a first axis of the display device as illustrated in Figs. 1, 5a, 6a and 6b, a first display driver 14, 251a, and 67 for driving the first liquid crystal cell in a first direction and a second direction; a second display driver 15, 251b and 68 for driving the liquid crystal cell in a first direction and a second direction; and means for synchronizing 16 the first and second display drivers; and wherein the first and second display drivers are positioned at opposite sides of the LCD as illustrated in Figs. 1, 5a, 6a and 6b. This subject matter provides a symmetrical appearance which, as stated above, is important in applications such as mobile telephones where the appearance and display available for the display device is at a premium.

The present invention is an improvement of the prior art illustrated in Fig. 8a and 8b. The claimed invention pertains in part to display drivers which each drive the liquid crystal cell in a first direction and in a second direction. In contrast, devices of the type illustrated as the prior art in Fig. 8b and to which United States Patent 5,841,431 pertain as discussed below use first and second drivers which respectively drive the liquid crystal cells in a first direction and a second direction.

The specification stands objected to regarding the abstract.

Reconsideration of this rejection is requested in view of the applicant having previously provided an abstract in a single paragraph. A copy of that abstract is submitted again.

Claims 11, 12 and 14 stand objected to regarding improper dependency on claim 9. The Examiner is thanked for pointing out this matter which has been corrected by changing the dependency to claim 28.

Claims 1 - 8, 11 - 18 and 28 stand rejected under 35 U.S.C. §102 as being anticipated by United States Patent 5,347,294 (Usui et al). These grounds of rejection are traversed for the following reasons.

Claim 1 recites:

A display device comprising:
a liquid crystal display (LCD) comprising first and second liquid crystal cells positioned along a first axis of the display device;
a first display driver for driving the first liquid crystal cell in a first direction and in a second direction;
a second display driver for driving the second liquid crystal cell in a first direction and in a second direction; and
means for synchronizing the first and the second display drivers; and
wherein the first and second display drivers are positioned at opposed sides of the LCD.

Claim 28 recites:

A display device comprising:
a liquid crystal display (LCD) comprising first and second liquid crystal cells positioned along a first axis of the display device;
a first display driver for driving the first liquid crystal cell in a first direction and in a second direction;
a second display driver for driving the second liquid crystal cell in a first direction and in a second direction;
means for synchronizing the first and the second display drivers; and
a connector for connecting display device circuitry to an external element, and an intermediate element for interfacing the display device and the connector; and

wherein the first and second display drivers are positioned at opposed sides of the LCD; and
the intermediate element is located substantially behind the LCD.

Each of independent claims 1 and 28 recite a first display driver for driving the first liquid crystal cell in a first direction and in a second direction and a second display driver for driving the second liquid crystal cell in a first direction and in a second direction. This subject matter has no counterpart in Usui et al. Accordingly, claims 1 - 8, 11 - 19 and 28 are not anticipated.

Usui et al disclose an image display apparatus in which individual scan electrode drivers 21 and 22 respectively drive horizontal display lines 1-240 and 241-480 and signal electrode drivers 23 and 24 respectively drive 736 pixels per display line in each of the crystal panels 20A and 20B. See column 8, lines 42 through column 10, lines 1 - 40. Accordingly, it is submitted that the Examiner has improperly construed the teachings of Usui et al since the combination of activation of particular lines of the display by the activation of the scan electrode drivers 21 and 22 in combination with the activation of the individual pixels within the activated line by the separate signal electrode drivers 23 and 24 is required to produce the display.

Accordingly, a person of ordinary skill in the art understands that Usui et al teaches the utilization of four display drivers to accomplish a display which does not meet the subject matter of independent claims 1 and 28 which recite only two display drivers which each drive different liquid crystal cells in two directions. Accordingly, it is submitted that the rejection of claims 1 and 28 as being anticipated by Usui et al is erroneous. Moreover, dependent

claims 2 - 8 and 11 - 19 define further aspects of the present invention which are not anticipated by Usui et al.

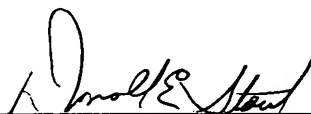
Newly submitted claims 29 and 30 have been added to respectively define a preferred orientation of the first and second directions as recited in claims 1 and 28.

In view of the foregoing remarks it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (Case No. 1156.40909X00) and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in black ink, appearing to read "Donald E. Stout", is written over a horizontal line.

Donald E. Stout
Registration No. 26,422

DES/jla
(703)312-6600
Attachment